AMENDMENTS IN THE SPECIFICATION:

Please add the following new paragraphs after the paragraph beginning at page 9, line 23, which starts with "Another advantage of the invention":

To summarize, the invention concerns a method for making a long superconductor, e.g., a superconducting tape or wire, and a so produced superconductor. This long superconductor comprises at least one polycrystalline superconducting compound deposited on a substrate, preferably on a buffer layer system on said substrate, wherein at least one percolation path extends along the length of the tape or wire. This path consists of grains of the superconducting compound, whereby the majority of these grains in the path have a shape such that their projection onto the surface of the substrate, being characterized by a length L_{par} parallel to the longitudinal extension of the tape and a length L_{per} perpendicular thereto, has an aspect ratio $a = L_{par}/L_{per}$ exceeding 1.5 or even 2. Further, the total volume V of grains that are members of such one or more percolation paths exceeds 10% of the volume of the superconducting compound.

One of the further aspects of the invention is that at least 95% of the grains have the shape with the predetermined aspect ratio $a = L_{par}/L_{per}$.

Another aspect is that the aspect ratio $a = L_{par}/L_{per}$ of the grains in the superconductor is determined by the microstructure of the substrate, in particular by the structure of its surface, e.g., by the shape and aspect ratio of the grains forming the surface of the substrate.

A further aspect is that the aspect ratio of the grains in the superconductor is determined by the microstructure of the buffer layer system, in particular by the aspect ratio of its grains at the interface to the superconductor.

The microstructure of the substrate or the buffer layer system, respectively, may be formed by mechanical treatment for producing small grooves in its surface, e.g., by polishing the substrate's surface. It may also be controlled by atom-beam treatment. These microstructure control steps may be executed and/or repeated until an average angular misorientation of the grains of less than 15° is achieved.

Still further aspects are that the aspect ratio of the grains of the superconductor $a = L_{par}/L_{per}$ exceeds 4 and/or that the volume V of grains that are members of one or more percolation paths exceeds 25% of the volume of the superconducting compound.

Still further aspects are that the buffer layer system consists of a single layer only, or that the superconducting compound is a polycrystalline compound directly deposited on the substrate without intermediate buffer layer.

Still further aspects are that the superconducting compound is a cuprate or belongs to the $ReBa_2Cu_3O_{7-\delta}$ family, Re being a rare earth including La or Y.

Another aspect is that the superconducting compound is a multilayer arrangement whose layers have different compositions.

Still further aspects are that the grains in the superconductor are aligned such that the average misorientation angle, in particular of the a-axis of the grains, is less than 20°.

Still further aspects are that the deposition of the superconductor is performed from the vapor phase or from a solution.

A still further aspect is that the substrate is a metallic tape such as steel or Ni alloy with a thickness in the range of 20 to 100 µm, whose surface grains are appropriately aligned.

Still further aspects are that the buffer layer comprises a plurality of sublayers such as $CeO_2/YsZ/CeO_2$ and/or the superconductor is of the $ReBa_2Cu_3O_{7-\delta}$ family, Re being a rare earth, including La or Y.